

[54] **MULTI-MODAL DATA INPUT/OUTPUT APPARATUS AND METHOD COMPATIBLE WITH BIO-ENGINEERING REQUIREMENTS**

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[56] **References Cited**

U.S. PATENT DOCUMENTS

3,376,551	4/1968	Armbruster	178/18
3,487,371	12/1969	Frank	340/146.3 SY
3,835,453	9/1974	Narayanan	235/92 R
3,928,960	12/1975	Reese	235/156
3,955,355	5/1976	Luce	58/50 R
4,001,550	1/1977	Schatz	235/61.7 B
4,005,400	1/1977	Engdahl	340/146.3 SY

OTHER PUBLICATIONS

Morrissey, "El. Calculator Based on Character Rec. of Input from Stylus Acceleration Dynamics," IBM Tech. Disclosure Bull., vol. 19, No. 7, Dec, 1976, pp. 2816-2817.

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[57] **ABSTRACT**

Apparatus and method for sensing, recognizing, displaying, processing and storing motion generated symbolic information including a hand held, mark-forming writing instrument having motion sensing means and a wrist mounted display communicating with the writing instrument through character recognition circuitry to simultaneously display information formed by the writing instrument. An information control and storage circuit is included capable of operating in any one of several possible modes to receive, store and cause the display of information thereby permitting a multiplicity of functions heretofor requiring a vastly greater number of physical components. In particular, this highly portable apparatus readily and broadly compliments the kinesiology of writing instruments and composes that accompany human thinking and problem solving. The operational modes include horological display, data calculation, reminder message storage and display, and financial account storage.

30 Claims, 17 Drawing Figures

